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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,044	01/30/2002	Patrick J. Butler	1348.105-US	4467

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EPSTEIN & GERKEN  
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ROCKVILLE, MD 20850-3164

EXAMINER

AWAI, ALEXANDRA F

ART UNIT	PAPER NUMBER
3663	

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/059,044	Applicant(s) BUTLER ET AL.	
	Examiner Alexandra Awai	Art Unit 3663	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,4,8,9,12-14,16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,4,8,9,12-14,16 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Status of the Claims***

1. Claims 1, 3, 5, 6, 7, 10, 11, 15, 17 and 19-31 have been cancelled. Claims 2, 4, 8, 9, 12-14, 16 and 18 are pending, and claims 4, 14 and 16 have been amended.

### ***Response to Amendment***

2. Although it was indicated by Examiner in the Advisory Action that claims 2, 4, 8, 9, 12-14, 16 and 18 would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claims, upon reconsideration and after an additional search, it appears that the claims are obvious in view of the prior art and that certain formal matters remain at issue. Examiner regrets any inconvenience or delay.

### ***Claim Objections***

3. Where claims 2, 4, 8, 9, 12-14, 16 and 18 set forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation, 37 CFR 1.75(i).  
Appropriate correction is required.
4. With regard to claim 2, it appears that the limitations of originally submitted claim 2 have been imperfectly incorporated into the independent claim. That is, where the claim recites "said second internal wall comprising a second planar internal forward wall and second planar internal rearward wall," it *should* recite "said second internal walls comprising a second planar internal forward wall and second planar internal rearward wall."

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 16 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding these claims, the word “means” is preceded by nouns such as “shoulder” and “tab” in an attempt to use a “means” clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the words preceding “means,” it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 2, 4, 8, 9, 12-14, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (6,375,130), and further in view of Payne (5,819,425) and Stanton (3,233,907).

Claims 2, 4, 8, 9, 12-14, 16 and 18 are directed to a clamp for use with a sparger end bracket as a means of reinforcing the welds joining the bracket body, end plate and sparger conduit. They claim a clamp structure consisting of upper and lower (first and second) members and a connecting member (i.e., a threaded screw for tightening) that is configured to engage the surfaces of the clamped body (bracket, end plate and conduit) in a fitted manner. The reinforcing of the welds is accomplished by providing particular grooves, shoulders and spaces between walls of the upper and lower clamping members that are individually and particularly claimed at length in terms of their configurations and relationships relative to one another. No individual clamp in the prior art has yet been found that possesses every surface, compartment and relationship as presently claimed, but the combined teachings of the references, along with the knowledge available to those skilled in the art, is sufficient to render the manufacture and application of the claimed clamp obvious.

Jensen et al. disclose a clamp for installation on an upper T-box of a feedwater sparger assembly (Fig. 2), which comprises upper and lower members that are shaped to conform to the surface of the clamped body (conduits 18 and 20, as well as T-box 26) and secured around the pipe junction by threaded connecting members (e.g., 48A). Jensen et al. specifically teaches that the clamping upper and lower members conform to the body that is clamped (col. 2, lines 5-11).

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Each connecting member has a central longitudinal axis that is parallel to the central longitudinal axis of the boiling water reactor vessel. The upper and lower members read upon the first and second clamp members of the present claims. They are possessed of a specifically configured space and attached with a cover plate (article 80), as can be seen in Fig. 2, in order to envelop the conduits and reinforce the welds joining the pipes, T-box and T-box cover – which is analogous to the end plate of the bracket assembly (col. 2, lines 5-41).

The essential differences between the clamped component of Jensen et al. and that of the present application is that the sparger conduit has a circular rather than a rectangular cross section, and welded end includes branching pipes while the present welded end is unbranched but attached by a conventional bracket to the vessel wall. The result of the first difference is that Jensen et al. fail to teach the various planar walls set forth in the claims. The result of the second difference is that Jensen et al. fail to teach that the clamping bodies may possess shoulders or grooves that particularly envelop the plate element welded to the end of the conduit. Despite these differences, however, Jensen et al. does teach that those skilled in the art know of the need to reinforce welds at pipe junctions and pipe terminals, and that clamping is a technology that is applicable to solving this problem. In addition to the particularly claimed connecting member and clamping members with their configured walls, shoulders and compartments, the claims recite impingement shields (claim 4), spacers (claim 8) and tabs (claims 9, 14 and 16).

With regard to the first deficiency, Payne teaches a clamp for a level, the level having an angular cross section which the clamp accommodates by providing a generally prismatic inner compartment with grooves/shoulders that particularly confine clamped body between first and second clamping components joined by a threaded connector (see Figs. 2 and 7). Payne therefore

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demonstrates the well known fact that those skilled in the mechanical are aware of the desirability of configuring clamps specifically for the body that is clamped and that this includes forming inner compartments having generally rectangular cross sections and grooves/shoulders that enable the clamp to conform to the clamped body as desired. Additionally see *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

One of ordinary skill in the art would be motivated by the teachings of Payne as discussed to modify the internal compartments of the clamp taught by Jensen et al. in the event that the clamped sparger conduit were prismatic rather than cylindrical. The motivation would be to have the clamping members conform to the clamped pipes, whatever the shape of those pipes, as such allows for a more fixed connection by the clamp. Those skilled in the art are well aware of how to apply this concept using known metalworking, and although the clamp taught by Payne is not specifically tailored to the nuclear industry, it is clearly related to the present invention by problem solving area: clamping. As to the claimed impingement shields and tabs, these are analogous in structure to the walls (26 and 28) taught by Payne in that they are confining structures that form part of the clamping members. Such is no more than the specific indication of characteristics of the obvious clamped members, and they further serve the same purpose of enclosing the clamped body according to its shape.

With regard to the second deficiency, Stanton discloses a coupling for joining pipe sections of differing diameter wherein a flanged end of a pipe is clamped. This structure is directly analogous to the section of pipe being clamped in the present invention, wherein the bracket forms a smaller pipe-like protrusion, the sparger conduit is the larger pipe and the pipes elements are joined by plates effectively forming a flange portion. As one can see from Figs. 1-5

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of Stanton, skilled artisans have previously conceived of forming a clamp that is tightened by a threaded connector over such a junction, the internals of the clamp accommodating and enclosing the coaxial tubes and a flange portion that joins them. The internal compartment that enables to clamp to conform to the junction may be created by spacers called adapters (12), for example. The use of such spacers is a technically obvious, advantageous application of a well known expedient in the mechanical arts.

It would have been obvious at the time of invention to modify the clamp taught by Jensen et al. to include the coupling as taught by Stanton in the event that the clamped sparger was connected to a conventional bracket at its terminal end. The T-box clamp was designed to provide structural integrity to the conduit junction (i.e., the pipes, T-box and T-box cover) and to hold the welded joint together in the event of weld failure – that is, solving the same problem as the invention of the present application for a substantially similar feedwater sparger component. The motivation to make the aforementioned modification is based on the desire to “prevent unacceptable leakage and to ensure that the core spray system delivers the necessary volumetric flow rate to the reactor core” (column 1, lines 44+); thus making expedient and economic use of available technology. Applying the teachings as discussed would entail no more than using known metalworking skills to join the coupling taught by Stanton to the sparger clamp taught and motivated by Jensen et al. and Payne, and would result in no more than the application of a notoriously well known expedient (i.e., the clamp) to a different – but entirely conventional – section of the sparger assembly. Although the extremely detailed claims set forth an arguably unique structure for performing this clamping function, it is not novel in view of known clamping technology, but rather is an obvious extension of such.



*Conclusion*

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexandra Awai whose telephone number is (571) 272-3079. The examiner can normally be reached on 9:30-6:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA  
August 29, 2006

  
JACK KEITH  
SUPERVISORY PATENT EXAMINER